Attn: Kate & Teri
From: Jan S

ATTACHMENT 6

Some Facts About FVO's Certification of Wild Fish Products

Farm Verified Organic was first approached with inquiries to certify fish from the wild as organic back in spring of 1998. Since that time we have conducted research and had discussions with a variety of producers, environmental groups, and government agencies in order to come to an understanding of the nature of these types of projects.

Protection of the world's fisheries from depletion and pollution are objectives worthy of FVO's mission, and we have come to the conclusion that organic certification of certain projects is possible. Pursuant to this idea, the FVO Certification Committee has submitted a position paper to the NOSB Livestock Committee, and developed a rigorous inspection and certification protocol for its first organic wild fish project to be included in the FVO certification program. As this pilot program evolves, FVO expects to come to even greater understanding of the complexity of projects of this kind, and will in turn continue to refine its own operations to ensure that its certification of these types of products meets the highest possible standards. We continue to research and explore associations with other like-minded groups, in an attempt to bring certification of wild marine products to the market in a manner which serves the spirit of the organic mission to the highest degree of execution.

To date, the newly certified project Capilano Pacific has cooperated with FVO to meet a very strict set of requirements and demands. After well over a year of discussion and planning, and almost a half year of inspection strategy, inspection visits, audits, follow-up inspections, audits, and planning for the future, certification was realized in October of 1999.

Included in the work accomplished thus far for this project are the following.

- Study of the fish population over the past 25+ years, based on research conducted by the Alaska Department of Fish & Game, as well as other environmental research groups
- Study of the life cycle and migratory patterns of the fish
- Confirmation that regulatory mechanisms are in place to control and document catching of fish, thereby assuring adequate escapement of fish from spawning grounds to the wild habitat, as well as accountability of the catch to be certified
- Definition of the entire fishery grounds, followed by inspection of the entire watershed and spawning region, to verify that spawning grounds have been uncontaminated and undisturbed, and remain that way
- Inspection of the techniques of fishing, to ensure that by-catch is minimized, and that all efforts are made to minimize pain and suffering of the target species.
- Inspection of all handling techniques, boats, equipment, and on-shore processing of fish, to ensure non-contamination of the fish, and an unbroken chain of custody of the products to be certified
- A full audit of the certified catch, to verify and distinguish certified organic product from ordinary fish products from the fishery
- Evaluation and verification of Capilano Pacific's own internal regulatory and control procedures, to ensure that oversight of all aspects of the program continue even in the absence of on-site FVO personnel.

Further inquiries or comments can be directed to FVO central office, using the following contact information:

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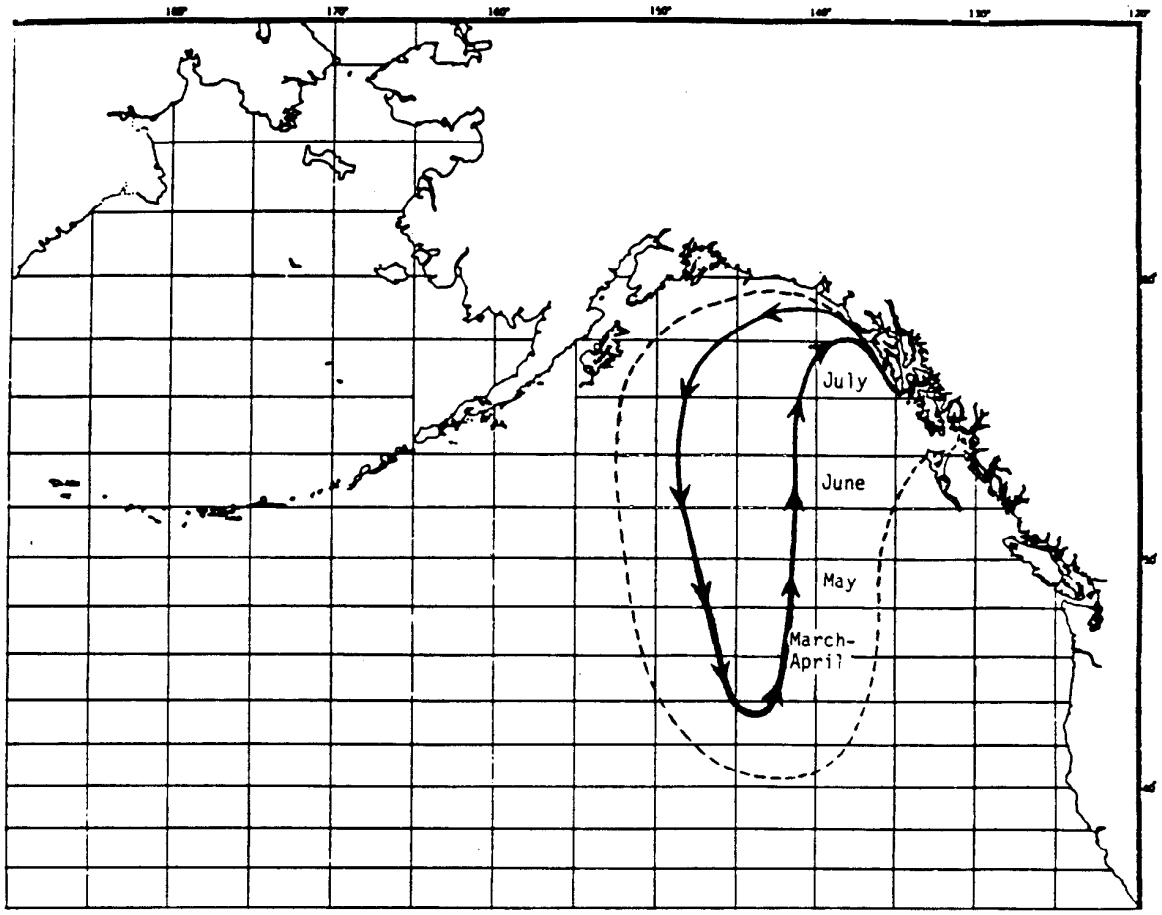

Figure . Average migration pattern of Southeast Alaska coho salmon based on tagging of juveniles in outer coastal waters, high seas tagging, and coded-wire tag recoveries from returning adults in coastal waters. Coho salmon spend approximately 16 months at sea with most smolts entering the ocean in May and returning to streams as adults in September of the following year.

Pacific Salmon Life Histories

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Godfrey (1965) stated that the rate of migration was difficult to judge, but it was known that a few individuals had averaged at least 48 km/d and that a slow rate may be the result of feeding diversions. Jensen (1953) and Allen (1966) estimated a rate of 9.2–13.0 km/d for fish moving from the central Washington coast to the Seattle area. An even slower rate of 6 km/d was reported by Parker and Kirkness (1951), who found that coho marked and released in Alaska had travelled an average of 215 km over a 36-day period. Van Hyning (1951) marked and recaptured coho that were feeding off the Oregon coast and found that they had moved only 3 km/d (range 0–17 km/d). Using some selected recoveries and assuming a fairly direct path between tagging and recovery locations, Godfrey et al. (1975) suggested an average migration rate of just under 30 km/d. Royce et al. (1968) stated that salmon could maintain a rate of 55 km/d over long distances.

Ocean Food Habits

On first entry to salt water, juvenile coho feed mostly on marine invertebrates, but as they grow larger they become more piscivorous (Shapovalov and Taft 1954). A number of studies have shown that coho, during their estuarine and early marine life stages, are important predators on chum and pink salmon fry (Parker 1971; Slaney et al. 1985). In her study of stomach contents of juvenile coho of both wild and hatchery origin from Yaquina Bay, Oregon, Myers (1978) found that coho captured in beach areas had eaten primarily anchovy (*Engraulis mordax*), surf smelt (*Hypomesus pretiosus*), and sand lance (*Ammodytes hexapterus*). In the channel areas, hatchery coho fed primarily on crangonid shrimp and megalopa larvae of Dungeness crab (*Cancer magister*), whereas wild coho concentrated on juvenile surf smelt. Levy and Levings (1978) found that coho smolts in the estuary of the Squamish River, British Columbia, were feeding on unidentified fish, as well as *Anisogammarus* and *Neomysis*. In the Strait of Georgia, Healey (1978) sampled coho that had a mean monthly (May-October 1976) fork length of 11.6–28.1 cm. Examination of stomach contents of these coho and of coho of a similar size caught in 1975 revealed that herring (*Clupea harengus*), sand lance, and unidentified fish remains accounted for 34.6% and 29.0% of the contents (by volume) over the two years and that amphipods accounted for 26.7% and 40.5%. Crab megalops were important in 1975 and made up 26.2% of the diet. Overall, the stomach contents as a percentage of body weight ranged from 0.40% to 1.51%. More recently, Healey (1980) noted that the amount and type of food in juvenile coho stomachs was a function of its availability and that there was a positive correlation between the abundance of juveniles and the amount of food in their stomachs. The fish are obviously attracted to good feeding areas and will remain there as long as the food is in sufficient supply.

Chamberlain (1907), sampling adult coho taken from the northern Gulf of Alaska, found that they had eaten sand lance, sticklebacks (*Gasterosteus aculeatus*), small herring, and the occasional flatfish, cottid, and salmonid. Marine invertebrates, including amphipods, isopods, and crab larvae, were also included in the diet. Pritchard and Tester (1943, 1944) found that coho consumed a wide variety of food items, but that herring and sand lance were the most important components of the diet. Pritchard and Tester (1943, 1944) also found that coho ate sardines (*Sardinops sagax*), anchovies, capelin (*Mallotus villosus*), rockfish (scorpaenids), sable fish (*Anoplopoma fimbria*), lanternfish (myctophids), Pacific saury (*Cololabis saira*), hake (*Merluccius productus*), walleye pollock (*Theragra chalcogrammus*), and other coho salmon. Among the invertebrates eaten by coho, they found euphausiids, squid (*Loligo opalescens*), goose barnacles (*Pollicipes polymerus*), and jellyfish, although the last three items were observed in one year only. The diet of adult coho salmon is very similar to that of chinook, except that invertebrates make up about one-fifth of the diet in coho, and less than 3% in chinook. In some situations, coho may feed more heavily on fish than do other salmonids (FRBC 1955).

On the Oregon coast, 97% of the stomachs of the troll-caught coho contained larvae of the Pacific crab (*C. magister*) (Anonymous 1949). Heg and Van Hyning (1951) found that maturing coho in their second summer at sea consumed herring, anchovies, smelt, euphausiids, and crab larvae (especially *C. magister*), and in some areas, squid. The diet of Washington coastal coho was similar to that of Oregon fish but included sardines and rockfish, with anchovies and smelts occurring rarely (Silliman 1941).